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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,109	07/16/2003	Richard Tango-Lowy	COGNITA-001XX	9090

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BOURQUE & ASSOCIATES, P.A.  
835 HANOVER STREET  
SUITE 303  
MANCHESTER, NH 03104

EXAMINER
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COUGHLAN, PETER D

ART UNIT	PAPER NUMBER
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2129

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/621,109

Applicant(s)

TANGO-LOWY, RICHARD

Examiner

Peter Coughlan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## Detailed Action

1. Claims 1-13 are pending in this application.

### ***Claim Rejections***

2. Claims 1, 6, 7 and 13 all state a "search engine" that mention a "symbol table" and "neuron table". Figure 1 clearly shows the "teaching engine" contains the "symbol table" and "neuron table" and not the "search engine".

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 6, 7, 12 and 13 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly

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connected, to make and/or use the invention. Claims 12 and 13 use the term "new answer information" which is not defined in the specification. Claims 1, 6, 7, 12 and 13 use the term "one character grouping" which is not defined in the specification.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al in view of Inoue, and further in view of Mehrotra ( U. S. Patent Publication 20020026369, referred to as **Miller**; U. S. Patent 5402519, referred to as **Inoue**; 'Elements of Neural Networks', referred to as **Mehrotra**).

Claims 1, 2, 6, 7, 8, 12 and 13.

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Miller teaches a user interface, for receiving requests for information and for receiving answer feedback, information (**Miller**, ¶0048, ¶0211 and ¶0221)

Miller does not teach an answer table containing a plurality of answers to possible requests for information, each said plurality of answers including at least one character grouping; a symbol table containing a plurality of unique symbols, each said plurality of unique symbols corresponding to one of said at least one character grouping of one answer in said answer table; a neuron table including a plurality of weightable links, each said weightable link corresponding to a weightable link between one of said plurality of unique symbols in said symbol table and one or more of said answers in said answer table. Inoue teaches an answer table containing a plurality of answers to possible requests for information, each said plurality of answers including at least one character grouping. (**Inoue**, C4:13-28 and 51-57; Examiner's Note (EN) 'Answer table' of applicant is equivalent to 'fuzzy membership functions' of Inoue. 'One character grouping' of applicant would be at least one answer of the fuzzy logic functions.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify teachings of Miller by using a fuzzy logic input to generate possible requests for information as taught by Inoue to have an answer table containing a plurality of answers to possible requests for information, each said plurality of answers including at least one character grouping.

For the purpose of generating one or more possible requests for a given input which fuzzy logic function can provide.

Inoue teaches a symbol table containing a plurality of unique symbols, each said plurality of unique symbols corresponding to one of said at least one character grouping of one answer in said answer table. (**Inoue**, C4:58 through C5:3; EN 'Answer table' of applicant is equivalent to 'forward neural network' of Inoue. The unique symbols of applicant would be the resulting answers from the forward feeding neural network.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify teachings of Miller by having a neural network that can easily produce a resulting symbol from the character grouping input from the fuzzy logic functions as taught by Miller to have a symbol table containing a plurality of unique symbols, each said plurality of unique symbols corresponding to one of said at least one character grouping of one answer in said answer table.

For the purpose of refining or narrowing the scope of the answer with the given data and being able to train or modify the symbol table as needs change. Inoue teaches a neuron table including a plurality of weightable links, each said weightable link corresponding to a weightable link between one of said plurality of unique symbols in said symbol table and one or more of said answers in said answer table. (**Inoue**, Figure #1 AND C8:7-29; EN 'Weightable links' of applicant is equivalent to 'weight-correcting section' of Inoue. Figure #1 clearly shows the 'weightable links' is between the answer table (fuzzy logic) and symbol table (neural network).) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify teachings of Miller by having correcting/adjusting weights for

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the neural network so training and modification can occur as taught by Inoue to have a neuron table including a plurality of weightable links , each said weightable link corresponding to a weightable link between one of said plurality of unique symbols in said symbol table and one or more of said answers in said answer table.

For the purpose of having the symbol table produce a correct outcome with a given input and have the ability to learn/modify.

Miller teaches a search engine, responsive to said user interface and to a received request for information, for parsing said received request into one or more query stimuli (**Miller**, abstract), for searching said symbol table for one or more unique symbols matching at least one of said one or more query stimuli, responsive to one or more matching unique answer symbols, for searching said neuron table to determine an answer responsiveness weight based upon individual answer symbol weightable links obtained from said neuron table for each of said one or more answers in said answer table having a weightable link between one of said plurality of unique symbols in said symbol table, and for presenting to said user one or more possible answers to said requested information based upon said determined answer responsiveness weight.

Miller does not teach a learning engine, responsive to said answer feedback, for increasing or decreasing said weightable link weight between unique symbols and said one or more answers and/or at least one specific answer.

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Inoue teaches a learning engine, responsive to said answer feedback, for increasing or decreasing said weightable link weight between unique symbols and said one or more answers and/or at least one specific answer. (Inoue, C2:56-66; EN 'Increasing or decreasing' of applicant is equivalent to 'adjusting' of Inoue.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify teachings of Miller by describing in more detail of how a neural network learns from feedback by adjusting weights as taught by Inoue to have a learning engine, responsive to said answer feedback, for increasing or decreasing said weightable link weight between unique symbols and said one or more answers and/or at least one specific answer.

For the purpose of the user having control of the system to respond in a way the user prefers.

Miller teaches receiving new answer information, said new answer information containing at least one character grouping. (Miller, ¶0221; EN 'New answer information' of applicant is equivalent to 'feedback' of Miller)

Miller does not teach adding said new answer information to said answer table, parsing said at least one character grouping of said new answer information into at least one unique symbol, adding said unique symbol to said symbol table if said unique symbol is not already in said symbol table and generating a new weightable link between said unique symbol and said new answer information, generating a new weightable link between a previously

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existing unique symbol and said new answer information if said unique symbol is already in said symbol table.

Inoue teaches adding said new answer information to said answer table. (Inoue, C8:30 through C9:4; EN 'New answer information' of applicant is equivalent to 'input information' of Inoue. Depending on what type of new answer information is inputted, Inoue has 3 ranges of membership functions to chose from.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify teachings of Miller by having the ability to pick the range of adaptability of fuzzy function per a given  $X_i$  as taught by Inoue to add new answer information to said answer table.

For the purpose of having a flexible system because input information does not remain constant.

Inoue teaches parsing said at least one character grouping of said new answer information into at least one unique symbol, adding said unique symbol to said symbol table if said unique symbol is not already in said symbol table and generating a new weightable link between said unique symbol and said new answer information, generating a new weightable link between a previously existing unique symbol and said new answer information if said unique symbol is already in said symbol table. (Inoue, C2:24-37; EN Parsing input generates output from the neural network. 'One unique symbol' of applicant is equivalent to 'new state' of Inoue. 'Weightable link' is equivalent to 'coupling coefficients' of Inoue.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Miller by having input

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value of at least one character grouping resulting into a symbol. If a current symbol is not precise a new symbol (output value) is generated along with all the adjusting weights as taught by Inoue to have said at least one character grouping of said new answer information into at least one unique symbol, adding said unique symbol to said symbol table if said unique symbol is not already in said symbol table and generating a new weightable link between said unique symbol and said new answer information, generating a new weightable link between a previously existing unique symbol and said new answer information if said unique symbol is already in said symbol table.

For the purpose of having a system that can expand as needed.

Claims 3, 4, 5, 9, 10 and 11.

Miller and Inoue do not teach learning engine strengthens one or more weightable links that match unique symbols to a selected answer; learning engines weakens said weightable links; learning engine weakens weightable links that match unique symbols to one or more non-selected answers.

Mehrotra teaches a learning engine strengthens one or more weightable links that match unique symbols to a selected answer; learning engines weakens said weightable links; learning engine weakens weightable links that match unique symbols to one or more non-selected answers (**Mehrotra**, page 22:16-24; EN Mehrotra illustrates there is a direct correlation between the weights (strength of connection) and outputs. So if input is to match a unique symbol, the link is strengthen (increased). If the correlation is between input and non-selected

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answers(incorrect) the link is weakened (decreased).) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify combined teachings of Miller and Inoue by using standardized methods for training a neural network as taught by Mehrotra to have a learning engine strengthens one or more weightable links that match unique symbols to a selected answer; learning engines weakens said weightable links; learning engine weakens weightable links that match unique symbols to one or more non-selected answers.

For the purpose of training a neural network to produce correct answers with a given input.

### ***Conclusion***

5. The prior art of record and not relied upon is considered pertinent to the applicant's disclosure.

-U. S. Patent 6397212: Biffar

-U. S. Patent 6339773: Rishe

-U. S. Patent 6292830: Taylor

-U. S. Patent 6282534: Vora

-U. S. Patent 6243670: Bessho

-U. S. Patent 6236989: Mandyam

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6. Claims 1-13 are rejected.

***Correspondence Information***

7. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor David Vincent can be reached at (571) 272-3687. Any response to this office action should be mailed to:

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(571) 273-8300 (for formal communications intended for entry.)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



Peter Coughlan

1/14/2006

